



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

RBE350A93-3312-03
Job Sheet 170955



001982

Part No: RBE350A93-3312-03

Job Qty: 6 ea

Part Name: Tail Rotor Hub Bushing Replacement Tool



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 1/24/18

Job Tracking No:

Due Date: 1/31/18

Created By: Marie Lajeunesse

Type: Stock

Description:

Note: DWG RBE350A93-3312-03 Rev F IPP Rev A 18.01.23 New issue DP Verify DD

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	6 Ea		1/30/18	0.00	0.00	Start Up Small Fab-4		MIC
100	Small Fab	6 pcs		1/31/18	0.00	0.60	Small Fab-9		MIC DAS
110	QC	6 pcs		1/31/18	0.00	0.00	QC5		38
130	Packaging	6 pcs		1/31/18	0.00	0.00	Packaging3-2		9-88
140	QC21-FG	6 Ea		1/31/18	0.00	0.00	QC21		

Part Op 100 - Assemble as per DWG sheet 1.

Descriptions: 130 - Identify and Stock

DAS
21
9-88

MAR 27 2018

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
90685A110	Hex Nut M12 X 1.75mm (Mcmaster)	6 (1 ea)	90-Start up Operation	50 86847
95327A708	Hex Head Screw M12 X 1.75mm x 100mm LG. (Mcmaster)	6 (1 ea)	90-Start up Operation	4036846
RBE350A93-3312-03-1	Receiver	6 Ea (1 ea)	90-Start up Operation	5053216
RBE350A93-3312-03-3	Remover / Installer	6 Ea (1 ea)	90-Start up Operation	
RBE350A93-3312-03-5	Seat	6 Ea (1 ea)	90-Start up Operation	
RBE350A93-3312-03-7	Washer	6 Ea (1 ea)	90-Start up Operation	

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation	90685A110 GAO65	6	0	0
	95327A708 GAO38	6	0	0
	RBE350A93-3312-03-1 MIC	6	0	0
	RBE350A93-3312-03-3 GAV	6	0	0
	RBE350A93-3312-03-5 GAV	6	0	0
	RBE350A93-3312-03-7 GAV	6	0	0

Part Specifications

Specifications could not be found.

Plex 1/24/18 2:51 PM Dart.lajeunesse.marie

DML 3-27

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____ Date : _____ _____ _____	DISPOSITION Container No: S054650 Part: RBE350A93 - 3312 - 03 Job No: 170955 Serial No/Batch: S054650 Revision: G Inspector: _____ Date: 03/25/18	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th colspan="4" style="text-align: center;">AGAINST DEPARTMENT/PROCESS</th> </tr> <tr> <td style="width:15%;">Skid-tube</td><td style="width:15%;">☐</td> <td style="width:15%;">Cross tube</td><td style="width:15%;">☐</td> <td style="width:15%;">Water Jet</td><td style="width:15%;">☐</td> <td style="width:15%;">Engineering</td><td style="width:15%;">☐</td> </tr> <tr> <td>Machining</td><td>☐</td> <td>Small Fab</td><td>☐</td> <td>Prod. Eng. Coord.</td><td>☐</td> <td>Quality</td><td>☐</td> </tr> <tr> <td>Forming</td><td>☐</td> <td>Finishing</td><td>☐</td> <td>Rec/Store/Packaging</td><td>☐</td> <td>Other</td><td>☐</td> </tr> <tr> <td>Large Fab</td><td>☐</td> <td>Composite</td><td>☐</td> <td>Supplier</td><td>☐</td> <td></td><td></td> </tr> <tr> <td colspan="6">QTY Effective :</td> <td colspan="2" rowspan="2" style="text-align: center; vertical-align: middle;">MRB (QS1042) Approval</td> </tr> <tr> <td colspan="6" style="text-align: center;">Disposition</td> </tr> <tr> <td colspan="6" rowspan="3"></td> <td colspan="2" style="text-align: center;">Completed By</td> </tr> <tr> <td colspan="2" style="text-align: center;">Lead hand / Supervisor Approval Verification</td> </tr> <tr> <td colspan="2" style="text-align: center;">QC / QA Coordinator Approval</td> </tr> </table>	AGAINST DEPARTMENT/PROCESS				Skid-tube	☐	Cross tube	☐	Water Jet	☐	Engineering	☐	Machining	☐	Small Fab	☐	Prod. Eng. Coord.	☐	Quality	☐	Forming	☐	Finishing	☐	Rec/Store/Packaging	☐	Other	☐	Large Fab	☐	Composite	☐	Supplier	☐			QTY Effective :						MRB (QS1042) Approval		Disposition												Completed By		Lead hand / Supervisor Approval Verification		QC / QA Coordinator Approval	
AGAINST DEPARTMENT/PROCESS																																																																
Skid-tube	☐	Cross tube	☐	Water Jet	☐	Engineering	☐																																																									
Machining	☐	Small Fab	☐	Prod. Eng. Coord.	☐	Quality	☐																																																									
Forming	☐	Finishing	☐	Rec/Store/Packaging	☐	Other	☐																																																									
Large Fab	☐	Composite	☐	Supplier	☐																																																											
QTY Effective :						MRB (QS1042) Approval																																																										
Disposition																																																																
						Completed By																																																										
						Lead hand / Supervisor Approval Verification																																																										
						QC / QA Coordinator Approval																																																										

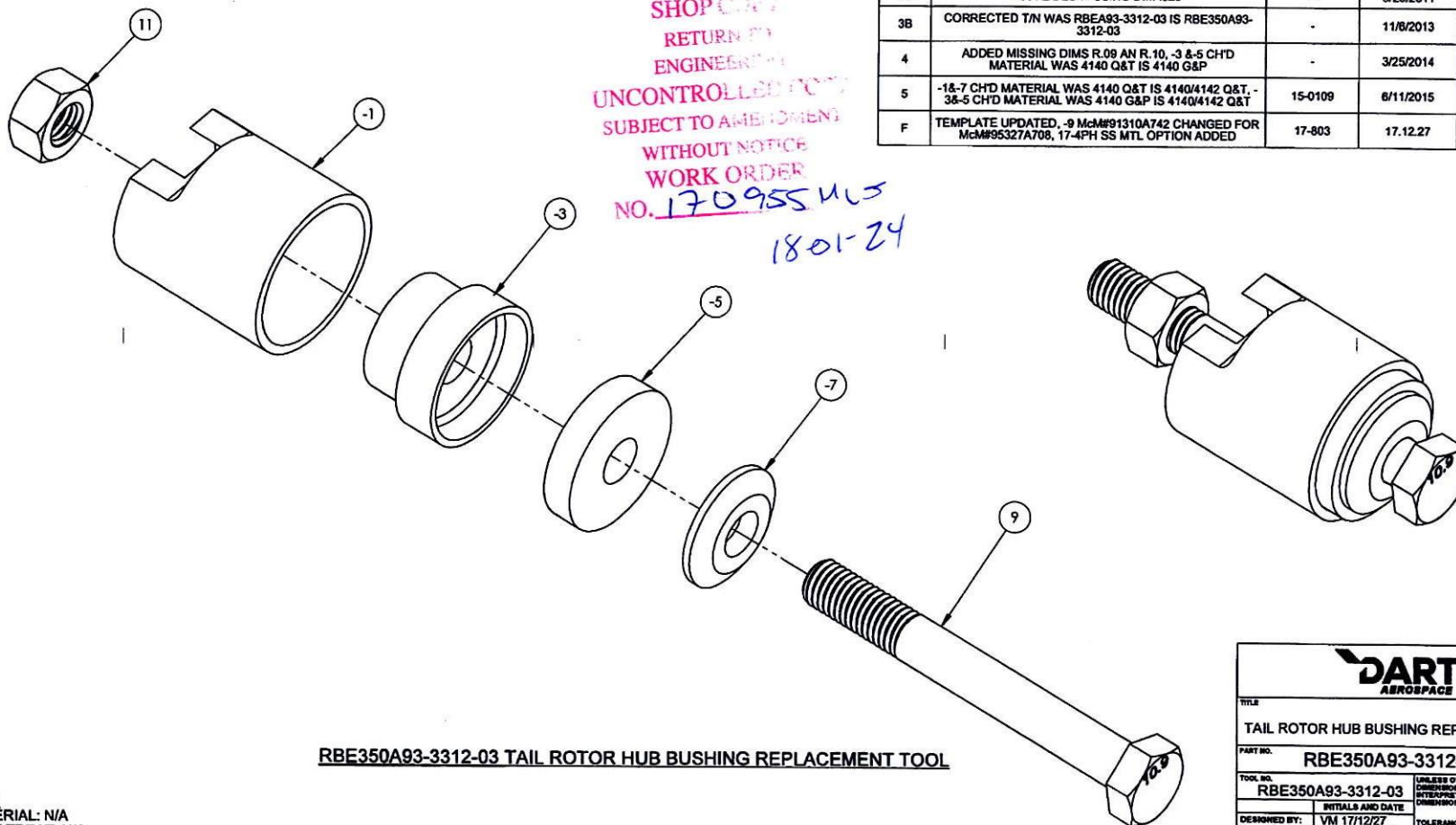
FAULT CATEGORY			
Temperature/Cure	☐	Power Loss/Surge	☐
Set-up	☐	Folio/Program	☐
OM/Route	☐	Grain	☐
Broken/Damage/Defect	☐	Weld	☐
Inspection Incomplete/Unqualified	☐	Wrong Stock Pulled	☐
Contamination	☐	Out of Sequence	☐
Countersink	☐	Off-set	☐
Cut Too Short	☐	Mislabeled	☐
Instructions Incomplete/Unclear	☐	Fit/Function	☐
Drill Holes	☐	Misaligned/off center	☐
		Positioned Wrong	☐
		Outside Dimensions	☐
		Over/Under tolerance	☐
		Part Incorrect	☐
		Part Lost/Missing	☐
		Part Moved	☐
		Drawing	☐
		Finish	☐
		Misread	☐
		Turning Sequence	☐

F	Environment	☐					
	Design	☐					
	Doc/Data	☐					
	Equip/Tooling	☐					
	Handling/Pre	☐					
	Material	☐					
	Internal Transport	☐					
	Tribal Knowledge	☐					
	LOA	☐					
	Substation	☐					
	Past Expiry Date	☐	☐	Manufacturing Process			
	Misidentified	☐	☐	Past Due	☐	OTHER :	

ITEM #	QTY	PART #	TITLE
-1	1	RBE350A93-3312-03-1	RECEIVER
-3	1	RBE350A93-3312-03-3	REMOVER / INSTALLER
-5	1	RBE350A93-3312-03-5	SEAT
-7	1	RBE350A93-3312-03-7	WASHER
9	1	McMaster#95327A708	HEX HEAD SCREW M12 x 1.75 x 100mm LG.
11	1	McMaster#90685A110	HEX NUT M12 x 1.75

REV.	DESCRIPTION	ECN #	DATE	BY	APPROVED
1	-01 ADDED S/N, "MADE IN USA"	-	4/29/2009	RJC	-
2	CHD ALL HOLES FROM 12.2mm TO 12mm FOR BETTER TOOL ALIGNMENT, CHANGES MADE TO MATCH CURRENT HELI-PRODUCTS TOOLS AND MORE OPEN TOLERANCES, -01 CHD DEPTH FROM .984 TO 1.06, ADDED R12 FOR LOOSER TOLERANCE, -03 CHD DIM FROM DIA 1.480 TO 1.487, FROM .939 TO .945, ADDED R.03, -05 CHD DIM WAS DIA 1.480 IS 1.487	-	9/30/2009	WP	RW
3	-01 CHD DIM WAS DIA 1.500 IS DIA 1.500 +0/- .003	-	12/15/2010	RJC	RW
3A	-03 ADDED MISSING DIM .325	-	9/20/2011	RJC	GE
3B	CORRECTED T/N WAS RBEA93-3312-03 IS RBE350A93-3312-03	-	11/8/2013	RJC	RW
4	ADDED MISSING DIMS R.09 AN R.10, -3 & -5 CHD MATERIAL WAS 4140 Q&T IS 4140 G&P	-	3/25/2014	DPD	GE
5	-1&-7 CHD MATERIAL WAS 4140 Q&T IS 4140/4142 Q&T, -3&-5 CHD MATERIAL WAS 4140 G&P IS 4140/4142 Q&T	15-0109	6/11/2015	RJC	JAG
F	TEMPLATE UPDATED, -9 McMaster#91310A742 CHANGED FOR McMaster#95327A708, 17-4PH SS MTL OPTION ADDED	17-803	17.12.27	VM	ML

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 170955 MLC
1801-24



RBE350A93-3312-03 TAIL ROTOR HUB BUSHING REPLACEMENT TOOL

NOTES:
1) MATERIAL: N/A
2) HEAT TREAT: N/A
3) FINISH: N/A
4) SPEC: N/A
5) BREAK ALL SHARP EDGES: N/A
6) IDENTIFICATION: N/A

DART AEROSPACE Hemelburg, Ontario, Canada	
TITLE TAIL ROTOR HUB BUSHING REPLACEMENT TOOL	
PART NO. RBE350A93-3312-03	REV F
TOOL NO. RBE350A93-3312-03	
INITIALS AND DATE	
DESIGNED BY: VM 17/12/27	TOLERANCES: DECIMALS: .008 FRACTIONS: 1/8
DRAWN BY: VM 12/28/2017	ANGLES: 2.5°
CHECKED BY: VM 01/02/2018	SURFACE: 2.5
INFO REVIEW BY: DD 01/02/2018	ROUGHNESS: 2.5
APPROVED BY: ML 01/06/2018	SCALE: NTS SHEET 1 OF 8
COPYRIGHT © 2017 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QS1042) Approval	
Description Work Order Deviation			Disposition		
			Completed By		
			Lead hand / Supervisor Approval Verification		
			QC / QA Coordinator Approval		
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					